

## **ABSTRACT OF THE DISCLOSURE**

The present invention relates to a method of fabricating ultra-fine grain cermet alloys with a homogenous solid solution grain structure. More particularly, the invention relates to a method of fabricating an ultra-fine TiC-base cermet alloy with a homogenous solid solution structure which does not comprise a core-rim structure in the carbide grain.

The object of the present invention is to provide a method of fabricating a TiC-base cermet alloy without the core-rim structure.

The above objects of the present invention could be achieved by employing a conventional sintering process (vacuum sintering) of (Ti,TM)C carbide obtained from a mechano-chemical synthesis (high energy ball-milling) from milling the powders of Ti, TM, Ni and Co metals.

### **KEY WORDS**

Cermet, Core-rim, Solid solution, High energy ball milling, Nano-composite powder, TiC